

## **REMARKS**

None of the claims have been amended herein. Claims 1-22 are currently pending and under consideration. Reconsideration is respectfully requested.

### **I. REJECTION OF CLAIMS 1-22 UNDER 35 U.S.C. 112, FIRST PARAGRAPH:**

The Applicant respectfully submits that support for the claim 1, 3, 17, 19, 20 and 22 can be found at FIGS. 2 and 3 and pages 11-12 (beginning at line 17 on page 11 – line 9 of page 12) of the Specification. Specifically, beginning at line 4 on page 12 of the specification which recites “**If the insertion loss for the optical isolator 11 is estimated at 1dB, and the insertion loss for the optical coupler 12 is estimated at 4dB, the output light power  $P_1$  of the optical repeater 1 can be set to a level in which 5dB is added to each threshold value**”. Therefore, the Applicant respectfully submits that support for “insertion loss of the optical parts is added to said threshold value” as recited in claim 1, for example. Therefore, withdrawal of the 112 rejections is respectfully requested.

### **II. REJECTION OF CLAIMS 1-5, 8-11, 14 AND 17-22 UNDER 35 U.S.C. 103(a) AS BEING UNPATENTABLE OVER OKAMURA (JP07-199244)(previously cited) IN VIEW OF CHRAPLYVY (U.S. PATENT NO. 6,580,536)(previously cited):**

Claim 1 recites “wherein output light power of said optical amplifying section is set based on said threshold value and insertion loss of optical parts arranged between an output end of said optical amplifying section, and an input end of the stimulated Brillouin scattering generating medium, and **wherein said threshold value is variably set in accordance with the stimulated Brillouin scattering generating medium, and the insertion loss of the optical parts is added to said threshold value**”. That is, in the present invention, the threshold value is variably set depending on the optical fiber utilized (i.e., SMF, DSF or DCF, etc.) and the insertion loss for the optical coupler and the optical isolator as shown in FIG. 3 is added to the threshold value, for example. Neither Okamura nor Chraplyvy, individually or combined, disclose or even suggest this feature.

As previously mentioned, Okamura merely discloses a configuration for compensating for optical waveform degradation not only by generating a phase conjugate wave but by propagating

the phase conjugate wave in the optical fiber cable 9 by the length that is to compensate for the waveform having been degraded by the optical fiber cable 2 (see paragraph [0002] of page 8 of the English translation of Okamura previously submitted by the Applicant).

Further, Okamura discloses that a signal intensity of 10dBm or above is necessary for generating the stimulated Brillouin scattering (see paragraph [0003] of page 8 in the English translation of Okamura previously submitted by the Applicant). That is, Okamura fails to disclose varying this value according to surrounding conditions of the scattering optical fiber cable 6 such as insertion loss of the branching section 5 as shown in FIG. 1 of Okamura.

At page 3 of the Office Action, the Examiner asserts that paragraphs [0009] and [0018] of Okamura disclose the output power of the optical amplifying section is set based on the threshold value and the threshold value inherently includes the insertion loss of the optical components. However, the Applicant respectfully submits that in these cited paragraphs, Okamura merely discusses the scattering optical fiber cable 6 having a length sufficient for a major part of a stimulated Brillouin scattered light due to optical energy, which is incident from the one end, to return to the one end. Here, Okamura is only discussing the "length" of the SBS generation medium. Okamura is silent about varying the optical power applied to the SBS generation medium. Therefore, the Applicant respectfully submits that Okamura does not teach or even suggest "wherein **output light power of said optical amplifying section is set based on said threshold value and insertion loss of optical parts arranged between an output end of said optical amplifying section, and an input end of the stimulated Brillouin scattering generating medium**, and wherein **said threshold value is variably set** in accordance with the stimulated Brillouin scattering generating medium, and the insertion loss of the optical parts is added to said threshold value," as recited in claim 1, for example.

At page 4 of the Office Action, the Examiner admits that Okumura fails to disclose or suggest "a power of noise light components in the amplified signal light is smaller than the threshold value," as recited in claim 1, for example. However, the Examiner asserts that it would be obvious to modify Okamura to include this feature. The Applicant respectfully traverses the Examiner's assertion and requests that the Examiner provide a reference to support this assertion or withdraw it.

Thus, the Applicant respectfully submits that the configuration of the present invention to eliminated the noise light component patentably distinguishes over the teachings of Okamura.

Further, as previously mentioned, Fig. 3 of Chraplyvy discloses output power level of optical signals received at an input of a receiver location, as measured using an optical

spectrum analyzer (see column 2, lines 63-67). The received power spectrum has a pass-band type characteristic where the power level in a central passband region is within a predetermined db range. A noise level spectrum is such that at wavelengths beyond edges of the passband, and the noise level has not fallen off as fast as the signal level and as a result the signal-to-noise ratio has deteriorated for wavelengths in the regions below and above the passband (see column 3, lines 8-26). The Applicant respectfully submits that Chraplyvy is not related to "noise light elimination". Therefore, there is no motivation to combine these references.

Further, the combination of Okamura and Chraplyvy fails to establish a prima facie case of obviousness over the present invention.

Claims 3, 17, 19, 20 and 22 recite similar features as those of claim 1. Therefore, the above comments would be helpful in understanding differences of various other rejected claims over the cited references. Therefore, it is respectfully submitted that the rejection is overcome.

**III. REJECTION OF CLAIMS 6-7 AND 12 UNDER 35 U.S.C. 103(a) AS BEING UNPATENTABLE OVER OKAMURA IN VIEW OF CHRAPLYVY ET AL. AND FURTHER IN VIEW OF SUGAYA ET AL. (U.S. PATENT PUBLICATION NO. 2001/0017729):**

Claims 6, 7 and 12 depend from claim 3. Therefore, the comments mentioned above in section II may be applied here, where applicable.

In addition, at page 6 of the Office Action, the Examiner admits that none of the foregoing references relied upon, disclose or suggest all of the features recited in claims 6, 7 and 12. That is, none of the foregoing references, disclose or suggest "said adjusting section includes an optical attenuator that attenuates said return light," as recited in claim 6, for example. In addition, these references fail to disclose "a detection section that detects a power of the return light outputting from said adjusting section; and a control section that controls an operation of said adjusting section based on a detection result of said detection section," as recited in claim 7, for example. Further, these references fail to disclose or suggest "transmission of the return light outputting from the first port of said optical coupler to said optical amplifying section is blocked by said optical isolator," as recited in claim 12, for example.

The Examiner asserts that it would be obvious to modify Okamura and Chraplyvy to disclose these features. The Applicant respectfully traverses the Examiner's assertion and requests that the Examiner withdraw these assertions or provide a reference(s) to support the assertions.

**IV. REJECTION OF CLAIM 13 UNDER 35 U.S.C. 103(a) AS BEING UNPATENTABLE OVER OKAMURA IN VIEW OF CHRAPLYVY ET AL. AND FURTHER IN VIEW OF JOHNSON ET AL. (U.S. PATENT PUBLICATION NO. 2002/0131104):**

Claim 13 also depends from claim 3. Therefore, the comments mentioned above in section II may be applied here, where applicable.

At page 8 of the Office Action, the Examiner admits that none of the foregoing references disclose or suggest "said optical input/output section includes an optical circulator arranged between an optical output end of said optical amplifying section and an optical input end of said stimulated Brillouin scattering generating medium," as recited in claim 13, for example. However, the Examiner asserts that it would be obvious to modify these references to disclose this feature. The Applicant respectfully traverses the Examiner's assertion and requests that the Examiner withdraw the assertion or provide a reference(s) to support the assertion.

**V. REJECTION OF CLAIM 15 UNDER 35 U.S.C. 103(a) AS BEING UNPATENTABLE OVER OKAMURA IN VIEW OF CHRAPLYVY ET AL. AND FURTHER IN VIEW OF KAI ET AL. (U.S. PATENT NO. 6,462,844):**

Claim 15 depends indirectly from claim 3. Therefore, the comments mentioned above in section II may be applied here, where applicable.

At page 9 of the Office Action, the Examiner admits that none of the foregoing references disclose or suggest "said optical receiving device includes a demultiplexer that demultiplexes the signal light transmitted on said optical transmission path, in accordance with a wavelength thereof, and said demultiplexer has filter characteristics where a center wavelength of a transmission band is set in accordance with a wavelength shift amount due to stimulated Brillouin scattering occurring in said noise light elimination apparatus," as recited in claim 15, for example. However, the Examiner asserts that it would be obvious to modify these references to include these features. The Applicant respectfully traverses this assertion and requests that the Examiner withdraw the assertion or provide a reference(s) to support the assertion.

**VI. REJECTION OF CLAIM 16 UNDER 35 U.S.C. 103(a) AS BEING UNPATENTABLE OVER OKAMURA IN VIEW OF CHRAPLYVY ET AL. AND FURTHER IN VIEW OF KAI ET AL. AND FURTHER IN VIEW OF UETSUKA ET AL. (U.S. PATENT NO. 6,549,696):**

Claim 16 also depends indirectly from claim 3. Therefore, the comments mentioned

above in section II may be applied here, where applicable.

Further, at page 10 of the Office Action, the Examiner admits that neither of the foregoing references relied upon, disclose or suggest, "demultiplexer includes an arrayed wave guide grating capable of adjusting the filter characteristics," as recited in claim 16, for example. The Applicant respectfully submits that it is would not be obvious to modify the foregoing references to include this feature. Therefore, the Applicant respectfully traverses the Examiner's assertion and request that the Examiner either withdraw the assertion or provide a reference(s) to support the assertion.

**VII. CONCLUSION:**

In view of the foregoing amendments and remarks, it is respectfully submitted that each of the claims patentably distinguishes over the prior art, and therefore, defines allowable subject matter. A prompt and favorable reconsideration of the rejection along with an indication of allowability of all pending claims are therefore respectfully requested.

If there are any additional fees associated with filing of this Amendment, please charge the same to our Deposit Account No. 19-3935.

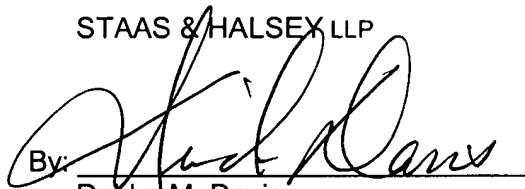
Respectfully submitted,

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